

Traffic Control Standard - No. 4

Disconnecting Traffic Signal Head Hanger

Revised February 24, 2005

General

The disconnect hanger shall provide a means for connecting the signal head both electrically and mechanically to the signal cable and the span wire in a fast and simple manner without the use of any tools.

The complete hanger, together with the top and bottom attachments, shall not increase the overall signal height from the span wire to the bottom attachments by more than 6 inches.

The size of the disconnect hanger, either 12-circuit or 18-circuit, shall be specified at time of order.

Disconnect Hanger Housing (Stock #14-08-1320 & #14-08-1326)

The disconnect hanger housing shall be constructed of high-strength aluminum alloy and shall be equipped with a door of similar material. The door shall be held closed by a device operable with one hand without use of tools. The door shall not be easily removed, and when open, shall provide complete access to the interior of the disconnect hanger housing. A device shall be included to hold the door open while working inside the hanger if it will not remain open on its own.

The disconnect hanger housing shall be equipped with two (2) or more weatherproof openings and shall be provided with suitable bushings for cable protection. All cable entrances combined shall be capable of accommodating a total of 3 signal cables 11/16" in diameter. A positive cable clamping method shall be employed to secure the cable from twisting. All cable clamps shall be reusable during the life of the hanger.

The disconnect hanger shall have included as an integral component one (1) balance-adjusting device and two (2) side-entry cable entrance fittings as shown in **Figure 2 (Stock #14-08-1320 & #14-08-1326)**. The balance-adjusting device shall have a minimum of five (5) in-line positions to provide horizontal pivoting on the suspension pin. One (1) position of the balance-adjusting device shall be located over the centerline of the attachment point for the signal section.

Two (2) types of adapters shall be associated with connecting the disconnect hanger and the signal head. One (1) type shall be a tri-stud assembly. The tri-stud assembly shall have characteristics and dimensions as shown in **Figure 3 (Stock #14-08-1315)**. The tri-stud adapter shall have a locking plate and three (3) equally spaced, stainless steel, threaded studs with serrated flange nuts. All flange adapter material shall be of cast aluminum construction. All locking shall be accomplished by means of serrations, detentes, setscrews, or similar devices.

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Terminal Block and Socket Assembly (Stock #14-08-1380 & #14-08-1385)

An easily accessible pressure type terminal block shall be located in the housing and shall accommodate a minimum of 12 or 18 separate lines as specified. Each terminal shall be capable of handling a wire range of #18 to #8 AWG copper and a 600 volt, 50 amp, electrical rating. A pressure plate shall be installed inside each terminal block to prevent damage when tightening the copper wire(s) onto the stainless steel pressure pad. The screws utilized to tighten down the wires shall be made of brass. In addition, each terminal shall be numbered or lettered for identification purposes, shall accommodate a minimum of two (2) #12 AWG conductors, and be sufficiently rugged to permit tightening for proper electrical connection.

Each 12-circuit or 18-circuit disconnect hanger shall be provided with a Cinch-Jones #S312AB 12-circuit or #S318AB 18-circuit polarized female socket or approved equal. A minimum wire size of #18 AWG stranded wire, having polyethylene or polyvinyl chloride insulation rated at 600 volts, shall be used to connect each numbered terminal on the terminal block to the corresponding numbered pin on the socket in all cases. The socket shall be positioned in the disconnect hanger as shown in **Figure 4 (Stock #14-08-1380 & #14-08-1385)**.

Plug and Harness Assembly (Stock #14-08-1300 & #14-08-1306)

Each 12-circuit or 18-circuit disconnect hanger shall be provided with a Cinch-Jones #P-312-CCE 12-circuit or #P-318-CCE 18-circuit polarized male plug or approved equal. The plug is to provide interconnecting power from the socket to the signal head. The plug shall include a cable clamp and 4 feet of cable. All plug wires shall be #18 AWG stranded wire and have a polyethylene or polyvinyl chloride insulation rated at 600 volts. All plug wires shall be neatly cabled and permanently labeled one foot from the free end with the corresponding pin number.

Span Wire Hanger (Saddle) (Stock #14-08-1310)

The hanger shall be furnished with span wire mounting hardware consisting of a span wire hanger (saddle), cable bar (protector), hex nuts, lock washers, and bolts as shown in **Figure 1 (Stock #14-08-1310)**. The saddle shall have a shoe with a nominal length of 7-3/4" and shall be designed to fit a cable range from 1/4" to 5/8". The saddle shall have one (1) cable bar (protector) and utilize two (2) J-Type bolts having 3/8" minimum threads to tighten the cable bar (protector) against the span wire. Centered on the bottom of the saddle shall be an opening for a suspension point utilizing a 5/8" suspension pin. The material used to manufacture the saddle and cable bar (protector) shall have a tensile strength of 32 to 36 thousand pounds per square inch minimum. If ferrous material is used, the material shall be hot-dipped galvanized.

Finish

The hanger, with the exception of the terminal block, socket and plug connectors, wiring, and span wire mounting hardware, shall be finished inside and out with two coats of high grade green

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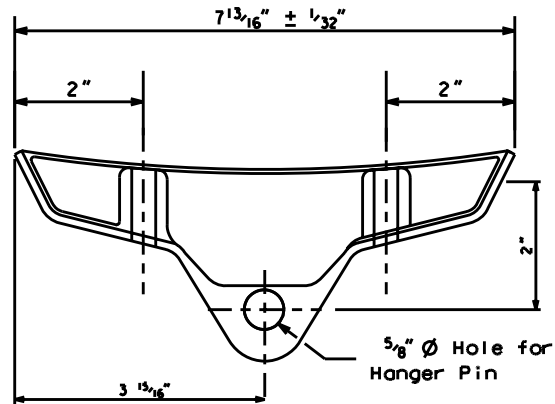
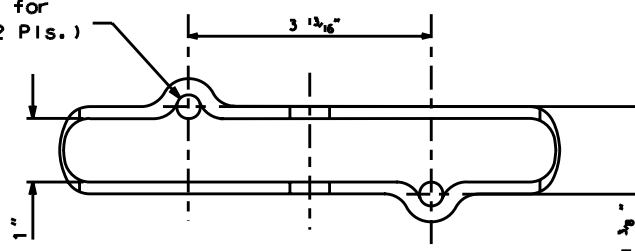
enamel (Outdoor Advertising Association No. 144 green), each coat independently baked to resist peeling and chipping.

Drawings and Literature

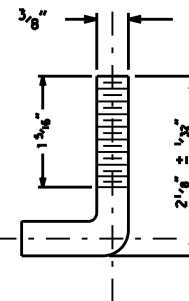
The vendor shall furnish with the first shipment of each order ten (10) parts lists and drawings of the assembly provided the order is for 10 or more units. If order is for less than 10, one (1) set of parts lists and drawings shall be provided for each unit ordered.

Guarantee

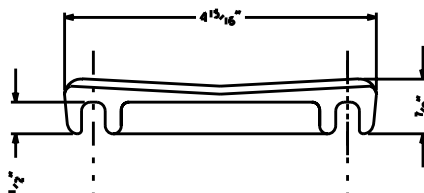
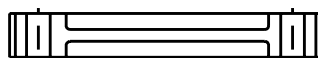
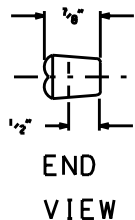
The manufacturer shall guarantee the unit to meet the above specifications, be free from defects in workmanship and materials, and function satisfactory for one (1) year from the date of acceptance by the Department.

TOP
VIEW3/8" \varnothing Hole for
'L' Bolt (2 Pls.)BOTTOM
VIEW* SEE NOTES 1,2
and 5

SADDLE

3/8" HEX
NUT3/8" LOCK
WASHER3/8"
J-BOLT* SEE NOTES 4
and 6

L-BOLT ASSEMBLY

* SEE NOTES 3
and 5SIDE
VIEWBOTTOM
VIEWEND
VIEWTOP
VIEW

CABLE BAR (PROTECTOR)

NOTE:

1. Span wire saddle to be designed to fit a cable range of $\frac{1}{4}$ " - $\frac{5}{8}$ ".
2. $\frac{5}{8}$ " Suspension(Hanger) pin not shown above but shall be included with device.(See NOTE 6)
3. Cable bar to fit inside of saddle with bolt slots facing downward as shown in cable bar Side View.
4. One(1) L-Bolt ($\frac{3}{8}$ " minimum size) to be present at each end of the saddle to hold the cable bar firmly against cable.
5. Material to be of Cast Aluminum construction with coating to prevent oxidization.
6. Material to be of Galvanized Steel construction.

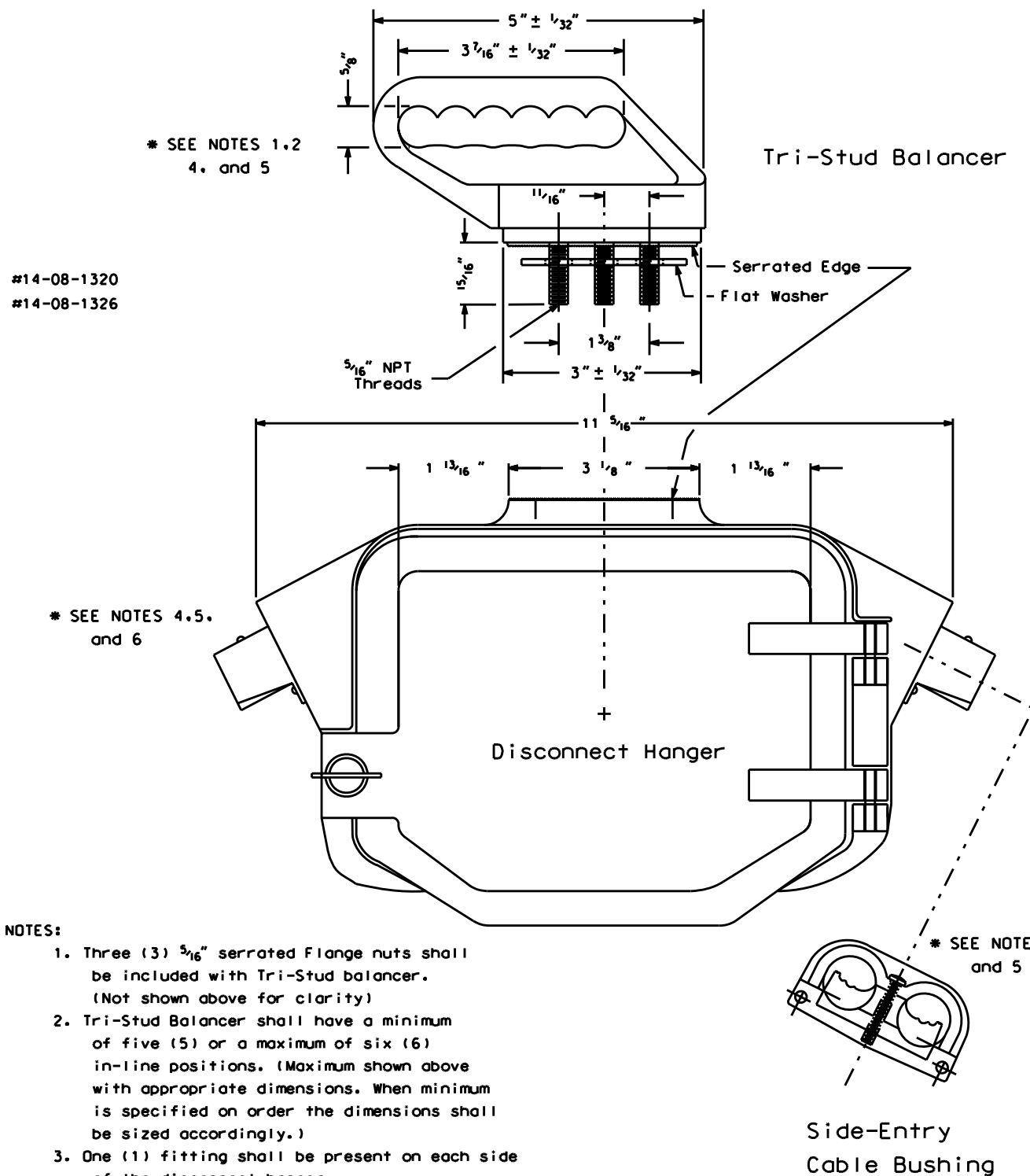
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SPAN WIRE HANGER (SADDLE) and ACCESSORIES FIGURE NO. 1

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DATE: 7/28/98

#14-08-1310



NOTES:

1. Three (3) 5/16" serrated Flange nuts shall be included with Tri-Stud balancer. (Not shown above for clarity)
2. Tri-Stud Balancer shall have a minimum of five (5) or a maximum of six (6) in-line positions. (Maximum shown above with appropriate dimensions. When minimum is specified on order the dimensions shall be sized accordingly.)
3. One (1) fitting shall be present on each side of the disconnect hanger.
4. Device material to be of cast aluminum construction.
5. Hardware material to be of galvanized steel construction.
6. 12-CIRCUIT HANGER SHOWN. WHEN 18-CIRCUIT HANGER IS ORDERED, DIMENSIONS SHALL BE SIZED ACCORDINGLY.

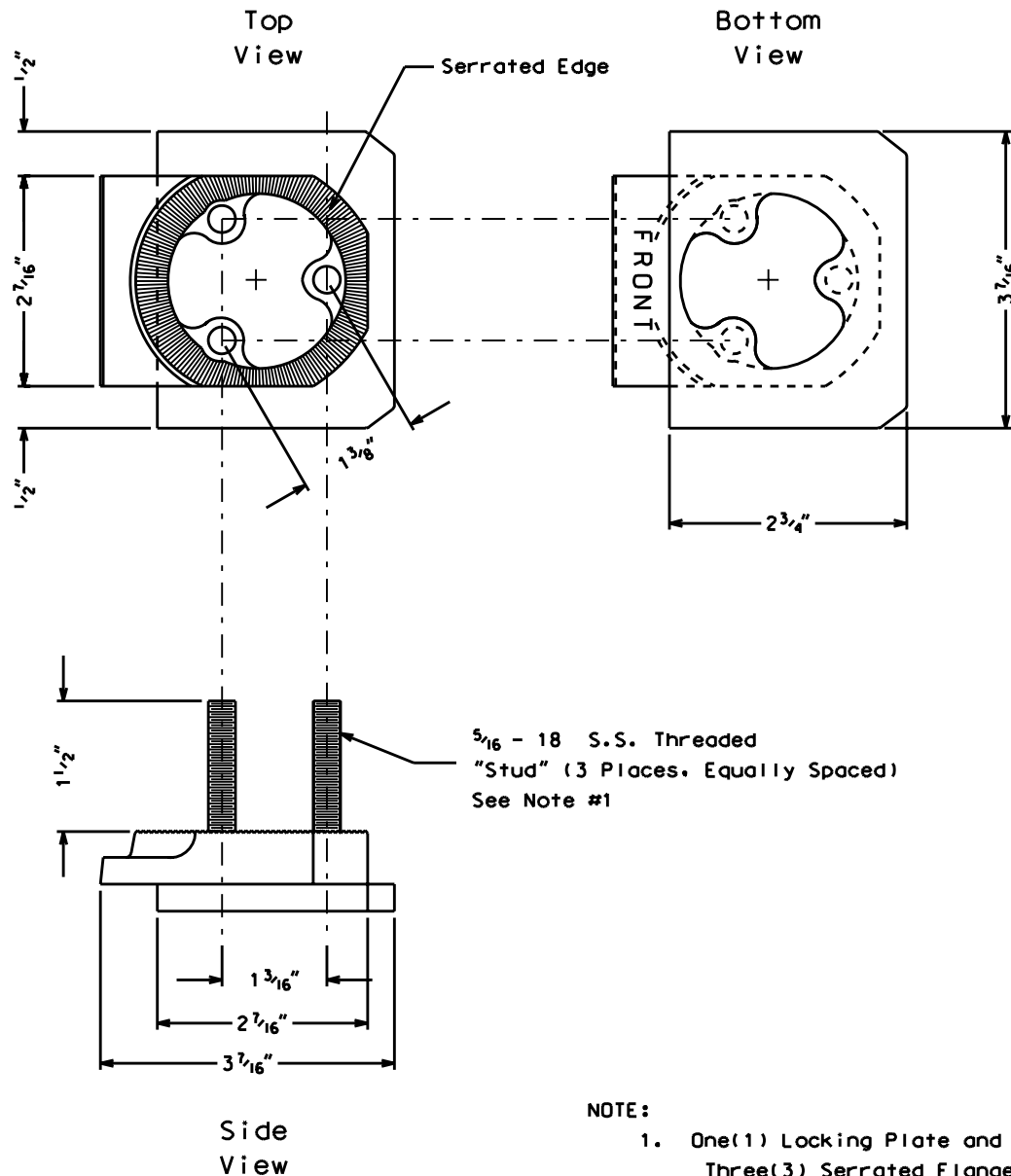
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DISCONNECT HANGER ASSEMBLY

FIGURE NO. 2

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NOTE:

1. One(1) Locking Plate and Three(3) Serrated Flange Nuts Are Required. (Not Shown)
2. Flange adapter material to be of cast aluminum construction.
3. See TCS #4 written specifications for more information.

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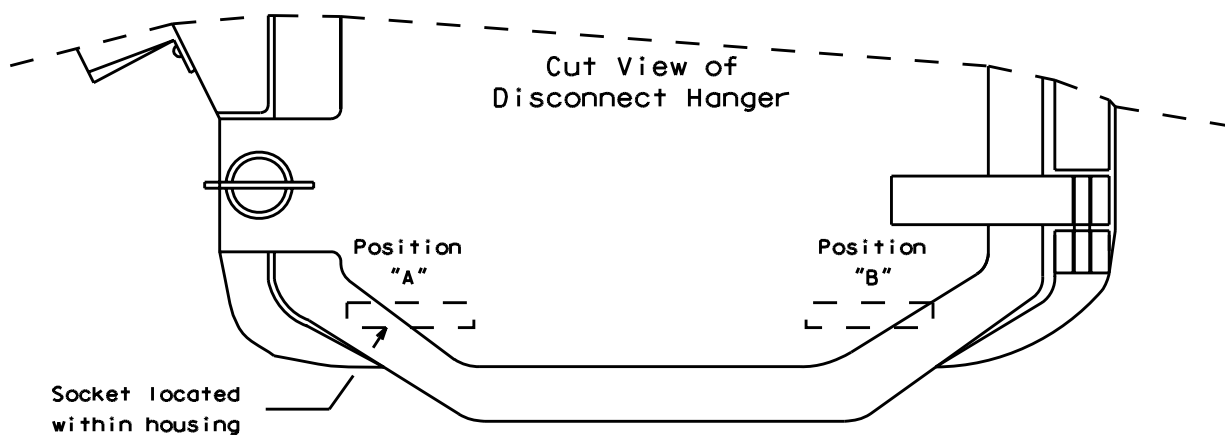
TRI-STUD ASSEMBLY

FIGURE NO. 3

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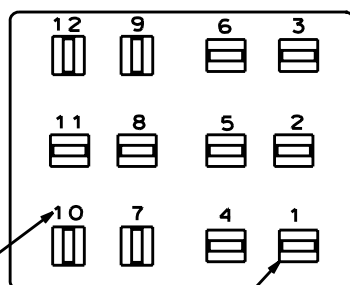
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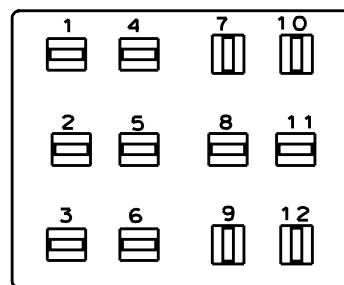


Position "A"

Position "B"



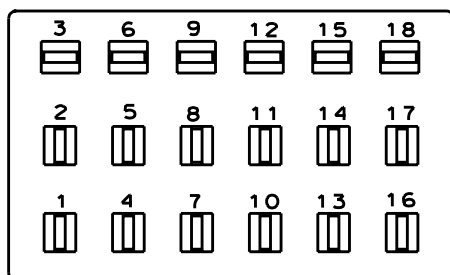
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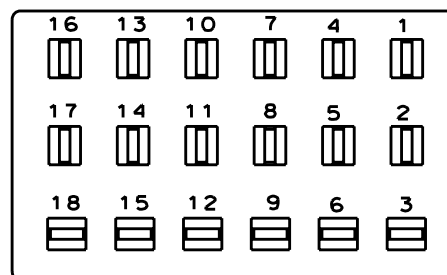
12 Circuit

Socket # (Typ.)

Socket (Typ.)



#14-08-1385



18 Circuit

NOTE:

1. Hanger and socket viewed from the front.
2. See TCS #4 written specifications for more information.

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SOCKET CONNECTOR ORIENTATION

FIGURE 4

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